



INSTITUT INTERNATIONAL DU FROID  
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## Annex A: CFCs and halons

Chemical formula	Substance	Ozone Depletion Potential (ODP)
<b>Group I : CFCs</b>		
$\text{CFCl}_3$	CFC-11	1.0
$\text{CF}_2\text{Cl}_2$	CFC-12	1.0
$\text{C}_2\text{F}_3\text{Cl}_3$	CFC-113	0.8
$\text{C}_2\text{F}_4\text{Cl}_2$	CFC-114	1.0
$\text{C}_2\text{F}_5\text{Cl}$	CFC-115	0.6
<b>Group II: Halons</b>		
$\text{CF}_2\text{BrCl}$	halon-1211	3.0
$\text{CF}_3\text{BR}$	halon-1301	10.0
$\text{C}_2\text{F}_4\text{BR}_2$	halon-2402	6.0

## Annex B: CFCs, carbon tetrachloride and methyl chloroform

Chemical formula	Substance	Ozone Depletion Potential (ODP)
<b>Group I : CFCs</b>		
$\text{CF}_3\text{Cl}$	CFC-13	1.0
$\text{C}_2\text{FCl}_5$	CFC-111	1.0
$\text{C}_2\text{F}_2\text{Cl}_4$	CFC-112	0.8
$\text{C}_3\text{FCl}_7$	CFC-211	1.0
$\text{C}_3\text{F}_2\text{Cl}_6$	CFC-212	1.0
$\text{C}_3\text{F}_3\text{Cl}_5$	CFC-213	1.0
$\text{C}_3\text{F}_4\text{Cl}_4$	CFC-214	1.0
$\text{C}_3\text{F}_5\text{Cl}_3$	CFC-215	1.0
$\text{C}_3\text{F}_6\text{Cl}_2$	CFC-216	1.0
$\text{C}_3\text{F}_7\text{Cl}$	CFC-217	1.0
<b>Group II: Carbon tetrachloride</b>		
$\text{CCl}_4$	Carbon tetrachloride	1.1
<b>Group III: Methyl chloroform</b>		
$\text{C}_2\text{H}_3\text{Cl}_3$	1,1,1-trichloroethane	0.1



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## Annex C: HCFCs, HBFCs and bromochloromethane

Chemical formula	Substance	Ozone Depletion Potential (ODP)	100-year global warming potential (GWP)
<b>Group I : HCFCs</b>			
$\text{CHFCI}_2$	HCFC-21	0.04	121
$\text{CHF}_2\text{C}$	HCFC-22	0.055	1810
$\text{CH}_2\text{FCI}$	HCFC-31	0.02	
$\text{C}_2\text{HFCl}_4$	HCFC-121	0.01-0.04	
$\text{C}_2\text{HF}_2\text{Cl}_3$	HCFC-122	0.02-0.08	
$\text{C}_2\text{HF}_3\text{Cl}_2$	HCFC-123	0.02-0.06	77
$\text{C}_2\text{HF}_4\text{Cl}$	HCFC-124	0.02-0.04	609
$\text{C}_2\text{H}_2\text{FCI}_3$	HCFC-131	0.007-0.05	
$\text{C}_2\text{H}_2\text{F}_2\text{Cl}_2$	HCFC-132b	0.008-0.05	
$\text{C}_2\text{H}_2\text{F}_3\text{Cl}$	HCFC-133a	0.02-0.06	
$\text{C}_2\text{H}_3\text{FCI}_2$	HCFC-141	0.005-0.07	
$\text{C}_2\text{H}_3\text{FCI}_2$	HCFC-141b	0.11	725
$\text{C}_2\text{H}_3\text{F}_2\text{Cl}$	HCFC-142	0.008-0.07	
$\text{C}_2\text{H}_3\text{F}_2\text{C}$	HCFC-142b	0.065	2310
$\text{C}_2\text{H}_4\text{FCI}$	HCFC-151	0.003-0.005	
$\text{C}_3\text{HFCl}_6$	HCFC-221	0.015-0.07	
$\text{C}_3\text{HF}_2\text{Cl}_5$	HCFC-222	0.01-0.09	
$\text{C}_3\text{HF}_3\text{Cl}_4$	HCFC-223	0.01-0.08	
$\text{C}_3\text{HF}_4\text{Cl}_3$	HCFC-224	0.01-0.09	
$\text{C}_3\text{HF}_5\text{Cl}_2$	HCFC-225	0.02-0.07	
$\text{C}_3\text{HF}_5\text{Cl}_2$	HCFC-225ca	0.025	122
$\text{C}_3\text{HF}_5\text{Cl}$	HCFC-225cb	0.033	595
$\text{C}_3\text{HF}_6\text{Cl}$	HCFC-226	0.02-0.10	
$\text{C}_3\text{H}_2\text{FCI}_5$	HCFC-231	0.05-0.09	
$\text{C}_3\text{H}_2\text{F}_2\text{Cl}_4$	HCFC-232	0.008-0.10	
$\text{C}_3\text{H}_2\text{F}_3\text{Cl}_3$	HCFC-233	0.007-0.23	
$\text{C}_3\text{H}_2\text{F}_4\text{Cl}_2$	HCFC-234	0.01-0.28	
$\text{C}_3\text{H}_2\text{F}_5\text{Cl}$	HCFC-235	0.03-0.52	
$\text{C}_3\text{H}_3\text{FCI}_4$	HCFC-241	0.004-0.09	
$\text{C}_3\text{H}_3\text{F}_2\text{Cl}_3$	HCFC-242	0.005-0.13	
$\text{C}_3\text{H}_3\text{F}_3\text{Cl}_2$	HCFC-243	0.007-0.12	
$\text{C}_3\text{H}_3\text{F}_4\text{Cl}$	HCFC-244	0.009-0.14	
$\text{C}_3\text{H}_4\text{FCI}_3$	HCFC-251	0.001-0.01	
$\text{C}_3\text{H}_4\text{F}_2\text{Cl}_2$	HCFC-252	0.005-0.04	
$\text{C}_3\text{H}_4\text{F}_3\text{Cl}$	HCFC-253	0.003-0.03	
$\text{C}_3\text{H}_5\text{FCI}_2$	HCFC-261	0.002-0.02	
$\text{C}_3\text{H}_5\text{F}_2\text{Cl}$	HCFC-262	0.002-0.02	
$\text{C}_3\text{H}_6\text{FCI}$	HCFC-271	0.001-0.03	



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Chemical formula	Substance	Ozone Depletion Potential (ODP)
<b>Group II : HBFCs</b>		
CHBr <sub>2</sub>		1.00
CHF <sub>2</sub> Br	HBFC-22B1	0.74
CH <sub>2</sub> FBr		0.73
C <sub>2</sub> H <sub>2</sub> FBr <sub>4</sub>		0.3-0.8
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>3</sub>		0.5-1.8
C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>2</sub>		0.4-1.6
C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> Br		0.7-1.2
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>3</sub>		0.1-1.1
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>2</sub>		0.2-1.5
C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br		0.7-1.6
C <sub>2</sub> H <sub>3</sub> FBr <sub>2</sub>		0.1-1.7
C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Br		0.2-1.1
C <sub>2</sub> H <sub>4</sub> FBr		0.07-0.1
C <sub>3</sub> H <sub>2</sub> FBr <sub>6</sub>		0.3-1.5
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>5</sub>		0.2-1.9
C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>4</sub>		0.3-1.8
C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>3</sub>		0.5-2.2
C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Br <sub>2</sub>		0.9-2.0
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> Br		0.7-3.3
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>5</sub>		0.1-1.9
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>4</sub>		0.2-2.1
C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>3</sub>		0.2-5.6
C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>		0.3-7.5
C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Br		0.9-1.4
C <sub>3</sub> H <sub>3</sub> FBr <sub>4</sub>		0.08-1.9
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Br <sub>3</sub>		0.1-3.1
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Br <sub>2</sub>		0.1-2.5
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Br		0.3-4.4
C <sub>3</sub> H <sub>4</sub> FBr <sub>3</sub>		0.03-0.3
C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> Br <sub>2</sub>		0.1-1.0
C <sub>3</sub> H <sub>4</sub> F <sub>3</sub> Br		0.07-0.8
C <sub>3</sub> H <sub>5</sub> FBr <sub>2</sub>		0.04-0.4
C <sub>3</sub> H <sub>5</sub> F <sub>2</sub> Br		0.07-0.8
C <sub>3</sub> H <sub>6</sub> FBr		0.02-0.7
<b>Group III : Bromochloromethane</b>		
CH <sub>2</sub> BrCl	Bromochloromethane	0.12



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### Annex E: Methyl bromide

Chemical formula	Substance	Ozone Depletion Potential (ODP)
<b>Group I</b>		
CH <sub>3</sub> Br	methyl bromide	0.6

### Annex F: HFCs

Chemical formula	Substance	100-year global warming potential (GWP)
<b>Group I</b>		
CHF <sub>2</sub> CHF <sub>2</sub>	HFC-134	1,100
CH <sub>2</sub> FCF <sub>3</sub>	HFC-134a	1,430
CH <sub>2</sub> FCHF <sub>2</sub>	HFC-143	353
CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-245fa	1,030
CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	HFC-365mfc	794
CF <sub>3</sub> CHFCF <sub>3</sub>	HFC-227ea	3,220
CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	HFC-236cb	1,340
CHF <sub>2</sub> CHFCF <sub>3</sub>	HFC-236ea	1,370
CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-236fa	9,810
CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	HFC-245vz	693
CF <sub>3</sub> CHFCHFCF <sub>2</sub> CF <sub>3</sub>	HFC-43-10mee	1,640
CH <sub>2</sub> F <sub>2</sub>	HFC-32	675
CHF <sub>2</sub> CF <sub>3</sub>	HFC-125	3,500
CH <sub>3</sub> CF <sub>3</sub>	HFC-143a	4,470
CH <sub>3</sub> F	HFC-141	92
CH <sub>2</sub> FCH <sub>2</sub> F	HFC-152	53
CH <sub>3</sub> CHF <sub>2</sub>	HFC-152a	124
<b>Group II</b>		
CHF <sub>3</sub>	HFC-23	14,800